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Rainer Muller

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EXAMINER

BLACK, MELISSA ANN

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/596,993	Applicant(s) MULLER ET AL.	
	Examiner MELISSA A. BLACK	Art Unit 3612	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 5/28/09 and 11/30/09.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4, 12 and 19-35 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 12 and 19-35 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 May 2009 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Applicant's request for reconsideration of the finality of the rejection of the last Office action dated 9/30/09 and the Advisory Action of 12/14/09 are persuasive and, therefore, the finality of these actions are withdrawn. The 112 rejection and the drawing objection are hereby withdrawn. Claims 1-4, 12 and 19-35 are currently pending in the application and rejected as set forth below.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

2. Claims 1-4, 12 and 19-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Pat # 6,565,040 to Fay et al in view of US Pat # 3,567,162 to Lea.

Re Claim 1, Fay et al discloses an insulation structure for the internal insulation of a vehicle, comprising an insulation package (30), implemented using an insulation, and a film (26) positioned next to external skin (28), wherein the insulation package (30) is constructed using distinct insulation regions (See Figures 1-3), which are implemented using a first insulation (24) whose insulation material is burn-through safe, and a second insulation (22) whose insulation material is burn-through unsafe, these insulation regions being positioned along a finite series and laid next to one another up to a final insulation region (See Figures 1-3), whose insulation material is exchanged in alternating sequence. Re Claim 2, Fay et al discloses the insulation package (30) is implemented homogeneously using a second insulation (22), whose insulation material is burn-through unsafe, in which a plurality of burn-through safe barrier layers (24) are integrated. RE Claim 4, Fay et al discloses a second insulation region, which is implemented

Art Unit: 3612

using the burn-through unsafe insulation material (22) of the second insulation, is laid next to each of a first and a third insulation region (see figure 3) , which are equipped with the burn-through safe insulation material of the first insulation (24), and following the third and each further insulation region, which are equipped with the burn-through safe insulation material of the first insulation (24), a further insulation region is positioned, which is equipped with the burn-through unsafe insulation material of the second insulation (see figure 3). Re claim 12, Fay et al discloses wherein the plurality of burn-through safe barrier layers (24) are implemented using a material of high fire resistance, which is implemented as sufficiently resistant or insensitive to occurring fire or both, because of which propagation of the fire, which would flame against a surface region of the barrier layer in this situation, is prevented. Re Claims 34 and 35, Fay discloses that the insulation package is completely enveloped by the film (26, column 2, lines 51-53).

Fay et al fails to show the insulation package is positioned inside an intermediate space between internal paneling and the external skin of the vehicle.

Lea teaches the use of an insulation package (10) between an internal paneling (24) and an external skin (18) of the vehicle (see figure 1).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the internal paneling as taught by Lea on the device of Fay in order to protect the insulation package from damage during everyday wear and tear.

Art Unit: 3612

Re Claim 3, Fay et al, as modified fails to disclose wherein a first insulation region and an insulation region terminating the series are implemented using the insulation material of the first insulation.

It would have been obvious to one with ordinary skill in the art at the time the invention was made to start and finish the insulation package with the same first insulation for it is a mere rearrangements of known parts and requires little to no skill in the art.

Re Claim 19, Fay et al discloses an insulation structure for the internal insulation of a vehicle subject to accidental exposure of the vehicle to a fire external to the vehicle, the insulation structure comprising an insulation package with an external skin of the vehicle, and the insulation package comprises: at least one barrier layer; at least one insulation region; and a film providing an external surface of the insulation package, wherein the at least one insulation region is not capable of preventing burn-through of the fire, and the at least one barrier layer is capable of preventing burn-through of the fire, and the at least one barrier layer is positioned such that the insulation package is made burn through safe. Re claim 20, Fay et al discloses as wherein each of the at least one barrier layer is comprised of at least one burn-through safe (24). Re Claim 21, Fay et al discloses at least one barrier layer is integrated in the at least one insulation region (see figures). Re Claim 22, Fay et al discloses two barriers layers (24). Re Claim 23, Fay et al discloses wherein at least one insulation region (22) is disposed between the to barrier layers (24). Re claim 24, Fay et al discloses that the barrier layers lead without interruption through the at least one insulation region and up to a peripheral edge of at least one insulation region (see Abstract). Re Claim 25, Fay et al discloses the use of vertical course of the plurality of barrier layers (24) is delimited by two inner vertically diametrically opposed and

Art Unit: 3612

horizontally positioned boundary faces of at least two insulation regions (22) (see abstract). Re Claim 26, Fay et al disclose that the barrier layers (24) lead close to or press against two outer boundary faces of the at least one insulation region (22), the two outer boundary faces being horizontally diametrically opposing and vertically positioned. Re Claim 29, Fay et al disclose that the insulation package (20) is shaped to a curvature of the external skin (28) (see figures 1-3). Claims 30-33, Fay et al discloses the film and the at least one barrier layer is of a fire resistant material or fireproof fibrous material (see Columns 3-4), and the material is of a ceramic, a carbon, a silicate or combination thereof (column 4, lines 20-25), and wherein the film is completely enveloped by the film (column 3 line 4).

Re Claim 19, Fay et al fails to disclose the insulation package is positioned inside an intermediate space between internal paneling and the external skin of the vehicle.

Lea teaches the use of an insulation package (10) between an internal paneling (24) and an external skin (18) of the vehicle (see figure 1).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the internal paneling as taught by Lea on the device of Fay in order to protect the insulation package from damage during everyday wear and tear.

Re Claims 27 and 28, Fay et al fails to disclose that the insulation package is implemented as straight or zigzagged, or sinusoidal or cosinusoidal.

Lea teaches that the insulation package is implemented as straight or zigzagged, or sinusoidal or cosinusoidal (see Figure 1).

Art Unit: 3612

It would have been obvious to one with ordinary skill in the art at the time the invention was made to made the package implemented as straight or zigzagged, or sinusoidal or cosinusoidal as taught by Lea on the device of Fay et al in order to thicken the insulation layer in between the external and inner panel furthermore it is a mere design choice.

Response to Arguments

3. Applicant's arguments filed 5/28/09 have been fully considered but they are not persuasive. In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). In this case, Fay et al discloses the insulation package is used in aircraft fuselages (column 1 lines 10-22) and also shows the insulation package is positioned against the outside skin (28) of an airplane fuselage (30), but Fay fails to disclose the internal paneling of the airplane fuselage, wherein Lea teaches an insulation package that is disclosed in an intermediate space of an external paneling and an internal paneling. Lea's insulation contains a fire-resistant material (abstract) that is in an airplane fuselage, which further makes Lea a teaching that a fire-resistant material/insulation package is known to be made in the straight or zigzagged, or sinusoidal or cosinusoidal construction. Lea is used as a mere teaching of an interior paneling and the design choice of the insulation inside the intermediate space between the interior paneling and external paneling. As to applicant argument that Lea's material is

Art Unit: 3612

“fluffy” and made to unfold, it would be obvious that even if a crack or puncture in the wall would not occur during a crash the material would still obtain its fire-resistant property in the wall an insulate against fire.

As to applicants remarks filed 11/30/09 that Fay et al's film layer is not burn-through safe, Examiner would like to point out in Fay et al (Column 3 lines 40-62, **emphasis added**):

“Preferably, the **encapsulating envelope 26 is a polymeric film envelope**, such as but not limited to a Mylar film **or a polyimide film envelope with a polyimide film envelope being preferred since the use of such an envelope extends the burn through time when compared to a Mylar film envelope**. Two burn through resistant systems were tested using the same core materials, but with different film envelopes. A three layer system of 0.42 pcf (6.7 Kg/m.sup.3) Microlite AA glass fiber blankets was tested with a Mylar film covering and also with a polyimide film covering (System configuration I). A three layer system of ANSC carbon fiber blanket and two layers of 0.42 pcf (6.7 Kg/m.sup.3) Microlite AA glass fiber blankets was also tested with a Mylar film covering and also with a polyimide film covering (System configuration II). With System configuration I, the burn through time using the Mylar film covering was about 2.67 minutes and the burn through time using the polyimide film covering was about 3.25 minutes. With System configuration II, the burn through time using the Mylar film covering was about 4.25 minutes and **the burn through time using the polyimide film covering was about 8.50 minutes. Thus, in both tests, the system covered with the polyimide film exhibited a longer burn through time.**”

Therefore, Fay et al does discloses that the material of the film is a burn-through safe material, for it extends the time it takes to burn through the whole insulation package. As for the FAA NPRM Docket No. FAA-2000-7909, Improved Flammability Standards for Thermal~Acoustic Insulation Used in Transport Category Airplanes, it does not state what the burn-through safe time is for a single material, just the insulation package as a whole. Further, Fay et al discloses

Art Unit: 3612

more test result for the different embodiments of the invention and discloses (Column 4, lines 26

to end, **emphasis added**):

"The system 20 of the present invention preferably has a burn through time of at least 5 minutes and more preferably, 7 minutes. A system 20 of the present invention including three insulation layers 22 of 0.42 pcf.times.1 inch (6.7 Kg/m.sup.3.times.25.4 mm) Microlite AA glass fiber blanket and two interleaf barrier layers 24 of 40 mil Manninglas 1208 glass fiber mat coated on both sides with vermiculite, **encapsulated within AN47R Mylar film**, exhibited a burn through time of 10:00 minutes (**film failure at 5:00 minutes**; test stopped after 10:00 minutes). A system 20 of the present invention including two outer insulation layers 22 of 0.42 pcf.times.1 inch (6.7 Kg/m.sup.3.times.25.4 mm) Microlite AA glass fiber blanket, an intermediate layer 22 of 0.3 pcf.times.1 inch (4.8 Kg/m.sup.3.times.25.4 mm) Aero-mide polyimide foam and two interleaf barrier layers 24 of 40 mil Manninglas 1208 glass fiber mat coated on both sides with vermiculite, encapsulated within **AN47R Mylar film**, exhibited a burn through time of 10:00 minutes (**film failure at 4:38 minutes**; excessive smoke from foam; test stopped after 10:00 minutes). A system 20 of the present invention including three insulation layers 22 of 0.42 pcf.times.1 inch (6.7 Kg/m.sup.3.times.25.4 mm) Microlite AA glass fiber blanket and two interleaf barrier layers 24 of 0.015 inch (0.38 mm) Manninglas 1208 glass fiber mat knife coated with vermiculite, encapsulated within **Insulfab 240 Mylar film**, exhibited a burn through time of 10:00 minutes (**film failure at 3:54 minutes**; standard smoke; glowing mat at 5:21 minutes; test stopped after 10:00 minutes). A system 20 of the present invention including two outer insulation layers 22 of 0.42 pcf.times.1 inch (6.7 Kg/m.sup.3.times.25.4 mm) Microlite AA glass fiber blanket, an intermediate layer 22 of 0.3 pcf.times.1 inch (4.8 Kg/m.sup.3.times.25.4 mm) Aero-mide polyimide foam and two interleaf barrier layers 24 of 0.015 inch (0.38 mm) Manninglas 1208 glass fiber mat knife coated with vermiculite, encapsulated within an **Insulfab 240 Mylar film**, exhibited a burn through time of 10:00 minutes (**film failure at 4:04 minutes**; medium smoke; glowing mat at 6:10; test stopped after 10:00 minutes). A system 20 of the present invention including three insulation layers 22 of 0.42 pcf.times.1 inch (6.7 Kg/m.sup.3.times.25.4 mm) Microlite AA glass fiber blanket and two interleaf barrier layers 24 of Freudenberg C1999VM 200 grams/m.sup.2 fabric coated with vermiculite, encapsulated

Art Unit: 3612

within **Insulfab 240 Mylar film**, exhibited a burn through time of 10:24 minutes (**film failure at 7:40 minutes**; glowing mat exposed at 5:21 minutes; test stopped after 10:24 minutes)."

As can be seen above with the test results of Fay et al, the film layer material is burn-through safe if going by the standard time of 4 minutes, for the materials highlighted above take over 4 minutes to fail. Therefore, examiner will not be withdrawing the 103 rejection, and claims 33-35 stand rejected.

Conclusion

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MELISSA A. BLACK whose telephone number is (571)272-4737. The examiner can normally be reached on M-F 7:00-3:30 ET.

Art Unit: 3612

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Dayoan can be reached on (571) 272-6659. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Melissa A Black/

Examiner, Art Unit 3612

/GLENN DAYOAN/

Supervisory Patent Examiner, Art Unit 3612